



**PATENT**  
Attorney Docket No. **DHI-06207**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: Yung T. Huang  
Serial No.: 09/844,311  
Filed: 04/27/01  
Entitled: **Cells For Detection of Enteroviruses**

Group No.: Not yet assigned  
Examiner: Not yet assigned

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

**CERTIFICATE OF MAILING UNDER 37 CFR § 1.8(a)**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231, on **July 5, 2001**.

By: 

Anne M. Neiswander

Sir or Madam:

Prior to examination of the instant application, please amend the application as follows.

Instructions to amend the specification, and replacement paragraphs in clean form pursuant to 37 C.F.R. §1.121(b) are included beginning on page 2 and Tab 1 of this communication. A marked-up version of the specification's replacement paragraphs pursuant to 37 C.F.R. §1.121(b) is attached as Appendix I and Tab 2.

***PATENT***

Attorney Docket No. **DHI-06207**

**CLEAN VERSION OF REPLACEMENT PARAGRAPHS IN THE SPECIFICATION**  
**PURSUANT TO 37 C.F.R. §1.121(b)**

**IN THE SPECIFICATION:**

On page 10, line 5, please insert the following as a separate new paragraph:

The file of this patent contains at least one drawing executed in color. Copies of this patent with color drawings will be provided by the Patent and Trademark Office upon request and payment of the necessary fee.

Replace pages 41, 42, 44, 45, 51, and 52, with the pages which have corresponding page numbers and which are enclosed at Tab 1.

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**REMARKS**


The specification has been amended to indicate that color photographs are included in the application as required by 37 C.F.R. § 1.84(a)(2)(iii).

The specification has also been amended to correct typographical errors in formatting the Tables which appear on pages 41, 42, , 44, 45, 51, and 52. In each of the amended Tables, the formatting of the portion of the Tables which appears on the right hand side of the page has been amended to conform it to the formatting of the left hand portion of the Table on the same page.

These amendments do not introduce new matter.

Applicant respectfully requests entry of this Preliminary Amendment prior to examination of the present application.

Dated: July 5, 2001

  
Kamrin T. MacKnight  
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**Please direct all communication to:**

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## APPENDIX I

## MARKED-UP VERSION OF SPECIFICATION'S REPLACEMENT PARAGRAPHS

The following is a marked-up version of the specification's replacement paragraphs pursuant to 37 C.F.R. §1.121(b) instructions and markings showing changes made herein to the previous version of record of the specification.

**IN THE SPECIFICATION:**

On page 10, line 5, please insert the following as a separate new paragraph:

The file of this patent contains at least one drawing executed in color. Copies of this patent with color drawings will be provided by the Patent and Trademark Office upon request and payment of the necessary fee.

On pages 41, 42, 44, 45, 51, and 52, please amend the Tables appearing on those pages as shown by the markings in red ink on the pages which have corresponding page numbers and which are enclosed at Tab 2.

Table 2. Detection of Echoviruses Using BGMK (BG) Cells And  
BGMK-hDAF (BG-D) Cells

Echo-4	*	DAY 1		DAY 2		DAY 3	
		BG	BG-D	BG	BG-D	BG	BG-D
	-1	1+	2+	2+	3+	3+	3+
		1+	2+	2+	3+	3+	3+
	-2	1+	2+	1+	2+	2+	2+
		1+	2+	1+	2+	2+	2+
	-3	-	1+	-	1+	2+	2+
		-	1+	-	1+	2+	2+
	-4	-	-	-	-	2+	1+
		-	-	-	-	1+	1+
	-5	-	-	-	-	1+	1+
		-	-	-	-	-	-
	-6	-	-	-	-	-	-
		-	-	-	-	-	-

Echo-9	*	DAY 1		DAY 2		DAY 3	
		BG	BG-D	BG	BG-D	BG	BG-D
	-1	2+	3+	4+	4+	4+	4+
		2+	3+	4+	4+	4+	4+
	-2	1+	2+	4+	4+	4+	4+
		1+	2+	4+	4+	4+	4+
	-3	-	1+	3+	3+	4+	4+
		-	1+	3+	3+	4+	4+
	-4	-	-	2+	2+	3+	3+
		-	-	2+	2+	3+	3+
	-5	-	-	1+	1+	2+	2+
		-	-	-	-	-	-
	-6	-	-	-	-	-	-
		-	-	-	-	-	-
	-7	-	-	-	-	-	-
		-	-	-	-	-	-
	-8	-	-	-	-	-	-
		-	-	-	-	-	-

Table 2. Detection of Echoviruses Using BGMK (BG) Cells And BGMK-hDAF (BG-D) Cells

Echo-6	*	DAY 1		DAY 2		DAY 3	
		BG	BG-D	BG	BG-D	BG	BG-D
	-1	-	4+	-	4+	-	4+
		-	4+	-	4+	-	4+
	-2	-	4+	-	4+	-	4+
		-	4+	-	4+	-	4+
	-3	-	4+	-	4+	-	4+
		-	4+	-	4+	-	4+
	-4	-	4+	-	4+	-	4+
		-	4+	-	4+	-	4+
	-5	-	1+	-	4+	-	4+
		-	1+	-	4+	-	4+
	-6	-	1+	-	4+	-	4+
		-	1+	-	4+	-	4+
	-7	-	1+	-	4+	-	4+
		-	-	-	4+	-	4+
	-8	-	-	-	4+	-	4+
		-	-	-	-	-	-

Echo-11	*	DAY 1		DAY 2		DAY 3	
		BG	BG-D	BG	BG-D	BG	BG-D
	-1	-	4+	-	4+	-	4+
		-	4+	-	4+	-	4+
	-2	-	4+	-	4+	-	4+
		-	4+	-	4+	-	4+
	-3	-	3+	-	4+	-	4+
		-	3+	-	4+	-	4+
	-4	-	2+	-	4+	-	4+
		-	2+	-	4+	-	4+
	-5	-	1+	-	4+	-	4+
		-	1+	-	4+	-	4+
	-6	-	1+	-	3+	-	4+
		-	1+	-	3+	-	4+
	-7	-	-	-	1+	-	2+
		-	-	-	1+	-	3+
	-8	-	-	-	-	-	-
		-	-	-	-	-	-

addition to the detection of a higher dilution of these echoviruses, BGMK-DAF also showed earlier detection of higher dilutions of these echoviruses.

For echovirus-6 and echovirus-11, BGMK cells failed to detect these two viruses. Importantly, in contrast, BGMK-hDAF cells detected highly diluted virus by day 1. While not intending to limit the invention to any particular mechanism, these results indicate that hDAF is essential for entry of these two viruses into BGMK cells.

## B. Coxsackie Viruses

BGMK cells are the most sensitive cell line for the detection of Coxsackie B viruses and some Coxsackie A viruses. BGMK and BGMK-hDAF were compared for the detection of Coxsackie viruses A9, B1, B2, B4, and B5. The results are shown in Table 3.

Table 3. Detection of Coxsackie Viruses Using BGMK (BG) Cells And BGMK-hDAF (BG-D) Cells

Cox B1	*	DAY 1		DAY 2		DAY 3	
		BG	BG-D	BG	BG-D	BG	BG-D
-1		2+	4+	4+	4+	4+	4+
		2+	4+	4+	4+	4+	4+
-2		1+	4+	4+	4+	4+	4+
		1+	4+	4+	4+	4+	4+
-3		1+	4+	4+	4+	4+	4+
		1+	4+	4+	4+	4+	4+
-4		1+	3+	4+	4+	4+	4+
		1+	3+	4+	4+	4+	4+
-5		-	2+	4+	4+	4+	4+
		-	2+	4+	4+	4+	4+
-6		-	1+	2+	4+	4+	4+
		-	1+	2+	4+	4+	4+
-7		-	-	-	2+	-	4+
		-	-	-	-	-	-

Cox B5	*	DAY 1		DAY 2		DAY 3	
		BG	BG-D	BG	BG-D	BG	BG-D
-1		2+	4+	4+	4+	4+	4+
		2+	4+	4+	4+	4+	4+
-2		2+	4+	4+	4+	4+	4+
		2+	4+	4+	4+	4+	4+
-3		2+	4+	4+	4+	4+	4+
		2+	4+	4+	4+	4+	4+
-4		1+	2+	4+	4+	4+	4+
		1+	3+	4+	4+	4+	4+
-5		-	2+	4+	4+	4+	4+
		-	2+	4+	4+	4+	4+
-6		-	1+	1+	4+	4+	4+
		-	-	2+	4+	4+	4+
-7		-	-	-	-	-	4+
		-	-	-	-	-	-

Table 3. Detection of Coxsackie Viruses Using BGMK (BG) Cells  
And BGMK-hDAF (BG-D) Cells

Cox B2	*	DAY 1		DAY 2		DAY 3	
		BG	BG-D	BG	BG-D	BG	BG-D
		BG	BG-D	BG	BG-D	BG	BG-D
-1	3+	4+	4+	4+	4+	4+	4+
	3+	4+	4+	4+	4+	4+	4+
-2	3+	4+	4+	4+	4+	4+	4+
	3+	4+	4+	4+	4+	4+	4+
-3	2+	3+	4+	4+	4+	4+	4+
	2+	3+	4+	4+	4+	4+	4+
-4	2+	2+	4+	4+	4+	4+	4+
	2+	2+	4+	4+	4+	4+	4+
-5	1+	1+	4+	4+	4+	4+	4+
	1+	1+	4+	4+	4+	4+	4+
-6	1+	1+	3+	3+	4+	4+	4+
	-	1+	3+	3+	4+	4+	4+
-7	-	1+	-	2+	3+	4+	4+
	-	-	-	-	-	-	-

DELETE

Cox A9	*	DAY 1		DAY 2		DAY 3	
		BG	BG-D	BG	BG-D	BG	BG-D
		BG	BG-D	BG	BG-D	BG	BG-D
-1	2+	4+	4+	4+	4+	4+	4+
	2+	4+	4+	4+	4+	4+	4+
-2	2+	4+	4+	4+	4+	4+	4+
	2+	4+	4+	4+	4+	4+	4+
-3	2+	4+	4+	4+	4+	4+	4+
	2+	4+	4+	4+	4+	4+	4+
-4	1+	4+	4+	4+	4+	4+	4+
	1+	4+	4+	4+	4+	4+	4+
-5	1+	4+	4+	4+	4+	4+	4+
	1+	4+	4+	4+	4+	4+	4+
-6	-	2+	4+	4+	4+	4+	4+
	-	2+	4+	4+	4+	4+	4+
-7	-	1+	4+	4+	4+	4+	4+
	-	1+	4+	4+	4+	4+	4+
-8	-	1+	-	4+	-	4+	4+
	-	-	-	-	-	-	-

ADD  
DELETE

ADD  
DELETE



5

DELETE ADD DELETE ADD DELETE

Echo- 9	*	DAY 1		DAY 2		DAY 3	
		H <sub>292</sub>	H <sub>292</sub> -D	H <sub>292</sub>	H <sub>292</sub> -D	H <sub>292</sub>	H <sub>292</sub> -D
	-1	1+ 1+	1+ 1+	2+ 2+	2+ 2+	4+ 4+	4+ 4+
	-2	1+ 1+	1+ 1+	2+ 2+	2+ 2+	4+ 4+	4+ 4+
	-3	- -	- -	1+ -	1+ 1+	3+ 3+	3+ 3+
	-4	- -	- -	- -	- -	3+ -	3+ 3+
	-5	- -	- -	- -	- -	- -	- -
	-6	- -	- -	- -	- -	- -	- -

Table 6. Detection Of Echoviruses Using H<sub>292</sub> Cells and H<sub>292</sub>-hDAF (H<sub>292</sub>-D) Cells

DELETE ADD DELETE ADD DELETE

Echo-6	*	DAY 1		DAY 2		DAY 3	
		H <sub>292</sub>	H <sub>292</sub> -D	H <sub>292</sub>	H <sub>292</sub> -D	H <sub>292</sub>	H <sub>292</sub> -D
-1		1+	1+	2+	2+	3+	3+
		1+	1+	2+	2+	3+	3+
-2		-	-	1+	1+	2+	2+
		-	-	1+	1+	2+	2+
-3		-	-	1+	1+	2+	2+
		-	-	1+	1+	2+	2+
-4		-	-	-	1+	1+	1+
		-	-	-	-	1+	1+
-5		-	-	-	-	1+	1+
		-	-	-	-	-	1+
-6		-	-	-	-	-	-
		-	-	-	-	-	-
-7		-	-	-	-	-	-
		-	-	-	-	-	-
-8		-	-	-	-	-	-
		-	-	-	-	-	-

Echo-11	*	DAY 1		DAY 2		DAY 3	
		H <sub>292</sub>	H <sub>292</sub> -D	H <sub>292</sub>	H <sub>292</sub> -D	H <sub>292</sub>	H <sub>292</sub> -D
-1		2+	2+	3+	3+	4+	4+
		2+	2+	3+	3+	4+	4+
-2		1+	1+	2+	2+	4+	4+
		1+	1+	2+	2+	4+	4+
-3		-	-	2+	2+	3+	3+
		-	-	2+	2+	3+	3+
-4		-	-	2+	2+	3+	3+
		-	-	2+	2+	3+	3+
-5		-	-	1+	1+	3+	3+
		-	-	-	-	3+	3+
-6		-	-	-	-	2+	2+
		-	-	-	-	-	2+
-7		-	-	-	-	-	-
		-	-	-	-	-	-
-8							



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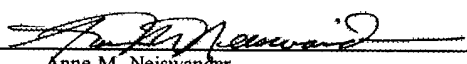
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**TRANSMITTAL OF FORMAL DRAWINGS**

Official Draftsperson  
Assistant Commissioner for Patents  
Washington, D.C. 20231

<b>CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8(a)(1)(i)(A)</b>	
I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is, on the date shown below, being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.	
Dated: <u>July 5, 2001</u>	By: <u></u> Anne M. Neiswander

Sir or Madam:


Attached please find:

☒ 5 sheets of formal drawing(s) for this application.

☒ Each sheet of drawing indicates the identifying indicia suggested in 37 CFR  
§ 1.84(c) on the reverse side of the drawing.

The Commissioner is hereby authorized to charge any additional fee or credit overpayment to our Deposit Account No. **08-1290**. **An originally executed duplicate of this transmittal is enclosed for this purpose.**

Dated: 5 July 01

  
Kamrin T. MacKnight  
Registration No. 38,230

Please direct all communications to:

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